

ABSTRACT OF THE DISCLOSURE

A self-healing WDM (Wavelength Division Multiplexing) – PON (Passive Optical Network) system is disclosed and includes a CO (Central Office), a RN (Remote Node) and a plurality of subscriber units. The system includes a trunk working fiber and a trunk protection fiber for connecting the CO with the RN, a distribution working fiber, and a distribution protection fiber for connecting the RN with the subscriber units. The CO is connected to the trunk working fiber and the trunk protection fiber, and contains an optical switching unit switched when an error or communication failure occurs, an upstream working optical receiver and an upstream protection optical receiver for receiving upstream data, and a downstream working light source and a downstream protection light source for transmitting downstream data. Each subscriber unit is connected to the distribution working fiber and the distribution protection fiber, and contains an optical switching unit switched when an error or communication failure occurs, a downstream working optical receiver and a downstream protection optical receiver for receiving downstream data, and an upstream working light source and an upstream protection light source for transmitting downstream data.